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## Optical fiber duplex patch cord LC/PC – SC/PC Multi-mode (MM) OM3, LSFH indoor

Multi-mode (MM) optical-fiber duplex patch cord Pre-terminated on one end with an LC/PC connector and with an SC/PC connector on the other; it can thus be used as an adapter for devices with different connectorization. Furthermore, since they are duplex, they are suitable for use in point-to-point networks that use the same window for both upstream and downstream traffic. The sheath being LSFH, it is recommended for indoor use.

Supplied in individual packing.

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### Highlights

- Includes identifiers for each of the fibers
- Includes aramid fibers to reinforce its structure
- Multimode OM3 ITU-T G.651.1 fiber type
- Duplex patch cord: two fiber cables
- LSFH sheath, aqua blue
- LC/PC and SC/PC connectors
- 2m long

### Discover

#### Multimode fiber types

Multimode (MM) optical fiber is that which can transmit **more than one light mode simultaneously**, allowing multiple signals to be propagated at the same time. Its main advantage over single-mode (SM) fiber is the lower cost of both the fiber and the optical devices, making it an **ideal solution for short distances**, such as enterprise networks, communications rooms or data centers.

Multimode fiber cables are classified into **5 categories**, called OM (Optical Multimode), from OM1 to OM5, and are

mainly differentiated by their **transmission speed in relation to distance**.

The following table shows the distance that each category reaches according to the transmission speed:

Category	Fast Ethernet	Gigabit Eth.	10Gigabit Eth.	40Gigabit Eth.	100Gigabit Eth.
OM1	2000m	275m	33m	-	-
OM2	2000m	550m	82m	-	-
OM3	2000m	-	300m	100m	70m
OM4	2000m	-	550m	150m	150m
OM5	-	-	550m	150m	150m

Additionally, multimode fibers differ in several factors:

- **OM1** fibers have a core **diameter** of **62.5µm**, while **OM2, OM3, OM4 and OM5** fibers have a smaller core of **50µm**
- **OM1 and OM2** were the first to be developed. They are designed for use with **LED light** sources and are now tending towards disuse, as they are not suitable for high-speed networks. The next categories, **OM3, OM4 and OM5**, have been designed for use with **laser emitters** (VCSEL) achieving higher levels of bandwidth and speed
- **OM3 and OM4** fibers work with **850 nm** wavelengths, however, **OM5** fiber has been optimized for **WDM** (Wave Division Multiplexing) applications. It is capable of transmitting up to **4 channels at higher wavelengths** (880, 910 and 940 nm), obtaining a very high bandwidth

The following table summarizes the main characteristics of each type of multimode fiber:

Category	Core/cladding diameter	Usual external color	Optical source	Bandwidth
OM1	65,2/125µm	Orange	LED	200 MHz·km
OM2	50/125µm	Orange	LED	500 MHz·km
OM3	50/125µm	Aqua blue	Laser (VCSEL)	2000 MHz·km
OM4	50/125µm	Magenta	Laser (VCSEL)	4700 MHz·km
OM5	50/125µm	Lime green	Laser (VCSEL)	28000 MHz·km

## What is the difference between OM3 and OM4?

Among the different categories of multimode (MM) fiber, **OM3 and OM4** fibers stand out as the **most widely used today**, since they achieve high transmission speed and bandwidth at an affordable price. **OM4 fiber is an evolution of OM3**, thanks to its improved internal construction, it has **lower attenuation** and thus manages to operate with a **higher bandwidth** than OM3, reaching **greater distances**.

## Technical specifications

Fiber core type		Multi-mode (ITU-T-G.651.1)
Optical fiber type category		OM3
Fiber core diameter	μm	50
Fiber cladding diameter	μm	125
Coating buffer diameter	μm	250
Outer sheath Diameter	mm	3
Outer sheath Material		LSFH
Blocking jelly		No
Insertion losses in connector 1	dB	< 0.3
Insertion losses in connector 2	dB	< 0.3
Return losses in connector 1	dB	> 30
Return losses in connector 2	dB	> 30
Optical connector type 1		LC
Polishing type (Optical connector 1)		PC
Optical connector type 2		SC
Polishing type (Optical connector 2)		PC
Structure reinforcement element		Aramid fibers
Minimum bending radius	mm	45
Operating temperature	°C	-20 ... 70